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CLINICAL MEDICINE

ORIGINAL ARTICLES

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AUTHORITATIVE INDEPENDENT PRACTICAL

"This is the maiden all forlorn"

Far too often in the past, the secondary anemia case improved to a point below normal, then stopped or showed very slow progress. Today, thanks to the efforts of research workers at the University of Wisconsin, physicians are better prepared to treat such cases. The answer lies in the discovery by the University group that maximum hemoglobin regeneration requires the presence of copper to act as a catalyst for the iron. • Cofron Elixir is based upon this discovery. It is a palatable liquid containing one part copper to 25 parts iron, the ratio found most effective by the Wisconsin investigators. In addition, Cofron Elixir contains liver concentrate as a source of vitamin B complex factors. • Cofron Elixir is offered for the treatment of nutritional and other secondary anemias, and for general use as an iron tonic and hematinic in the treatment of anemias accompanying prolonged illness. It is especially suitable for children and others who prefer liquid to capsules. Cofron with Liver Concentrate in Capsules is designed for the treatment of more severe secondary anemia. • Cofron Elixir is available for your prescribing convenience in 12-fluidounce and 1-gallon bottles. Cofron with Liver Concentrate in Capsules is stocked at pharmacies in bottles of 100, 500 and 1000 capsules. ABBOTT LABORATORIES, North Chicago, Illinois.

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IN CAPSULES

Food Allergy

A Brief Outline of General Facts of Food Sensitization

By HERBERT J. RINKEL, M.D., F.A.C.P.
Kansas City, Missouri

Which of your patients' symptoms (asthma, "sinusitis," "peptic ulcer") are due to food allergy? What about the allergy that appears and disappears? What is the only conclusive proof of food sensitivity?

The author presents a thoughtful, conservative answer to such important clinical problems.

IT IS the premise of this communication that there are certain fundamental facts, concerning the nature of food allergy, which should be understood and applied by every physician—regardless of his specialty. He should know when a patient requires study for the evaluation of food sensitivity and should also understand the nature of this syndrome. Finally, he should know the requirements in time and cooperation necessary to establish a complete diagnosis of food allergy.

A Classification of Food Allergy

A classification of types of food allergy, in terms of clinical practice, is not only the first—but one of the most important factors for the understanding of these patients. There are two main types:[1]

Permanent Food Sensitivity

1. Permanent or fixed food sensitivity (static). This type will account for 5 per cent to 10 per cent of the total food allergies in an average group of patients. As the name indicates, it is a permanent or fixed sensitization, which means that the continued existence of this allergy is not influenced by the use or omission of the specific food. This type of reaction may be assumed *if the absolute elimination of the food for one year is not followed by clinical tolerance*—and it is certain if tolerance is not acquired in two years.

2. Cyclic or dynamic type of food allergy. In these cases the use of the food tends to produce sensitization; the omission of the food tends to tolerance for that specific item. The time required to develop sensitization may vary from a few days to relatively long periods of time. Usually it requires much more time to gain tolerance than it does to create a state of allergy. A further discussion of development of sensitizations is given under the heading of 'Dynamic Factors'. There are three clinical forms of cyclic food allergy:

a. The perennial or primary form. This means that no other factor than the use of the food determines the occurrence of symptoms. This is the most common type.

b. The concomitant to inhalants, or co-seasonal pollen form. This implies that the use of the food does not produce a reaction, except when the patient is exposed to some specific inhalant. It is most commonly seen in the ragweed season. The more inhalants in the air, the more definite the reactions and the greater the number of foods which will affect a given patient.

c. Thermal type of sensitization. These are foods which, to all practical purposes, are tolerated except when the patient is chilled below a critical level. This temperature level varies with his place of living and his mode of living. Chilling may result from breathing cold air, or sweating and getting in a draft. It may result from contact with cold, i.e.: ice. The practical significance of this sensitization, is its etiologic relationship to so-called "colds" and "sinus dis-

ease." House dust and other inhalants also produce this reaction.

What is the value of this classification? First, it emphasizes that not every food which is a cause of symptoms today, will be a cause of symptoms at all times. Second, in the cyclic type of sensitization it is obvious that if a diet has been studied in the summer, it may not be correct for the winter months; again, if a food causes trouble in September, it may very well be used in December without symptoms. Unless the exact type of food sensitization is determined, patients will be kept off of many foods when it is not necessary.

The Significance of Degree of Sensitivity

The different manifestations of food allergy can best be understood if one conceives of them in terms of degree of sensitivity.

The foods with a high degree of allergy react soon after ingestion (if not masked), the onset is more abrupt, symptoms severe and usually long, unless the food is quickly evacuated. Lesser degrees of sensitization are usually less abrupt and less severe in producing symptoms. A practical illustration is what is generally called a cumulative reaction. For example: a patient eats a given food which has not been used for three weeks. It is taken twice daily, for four days, but on the fifth day symptoms develop following the meal at which the food was used. He omits the food five days, then eats it with impunity. This is generally considered a "cumulative" reaction. He takes another food which has not been used for three weeks and after using it five days—has symptoms. He omits the food five days and when he eats it again he *has symptoms the first time* it is eaten. These two foods are tested repeatedly and always result in this same pattern of reaction.

In the second instance the patient has obviously created an active allergic state which, when once created, remains until omission produces tolerance again. The difference in these two reactions are essentially differences in degree of sensitization—not in types of allergy. The practical importance is this: if one has the first type of response, the food may be used intermittently in the diet, without ill effect. Whereas, the second type of reaction implies the need for complete elimination of this food for a period of time.

Again, a patient may eat bananas for dinner and awaken out of sleep with asthma, at 1:00 a.m. If he eats carrots another evening, he awakens at 5:00 a.m. These two foods differ only in degree of reaction.

Except for fixed or permanent allergies, food sensitizations are dynamic. There are two components to this factor.

1. The eating habits of the patient. *People become sensitive to the foods they use most often.* It seems to be true that it is not the amount as much as the number of times per day the food is used—which determines rapidity of development of sensitivity. Therefore, it is important to know how people eat. A patient may eat a certain number of foods and develop symptoms, not by adding a new food, but by varying the frequency of the foods included in this diet. It is obvious if people become sensitive to what they eat, a considerable number of allergies, particularly in children, can be avoided by dietary instructions. This subject is fully discussed in another paper.[2]

2. The inherent tolerance for foods. This refers to an unknown but clinically definite factor which modifies the rate at which successive patients can and do become sensitive. Only those persons who inherit the ability to become allergic do so, but this faculty varies a great deal in different persons. The rule is, the sicker the individual—the easier it is for him to become sensitive to new foods.

Two patients with equally severe asthma, were seen in 1934. Both re-

quired an average of 13-20 injections of epinephrine daily, before study. Symptoms were controlled and it was found that wheat was an agreeable food for both of these patients. One patient used wheat in unlimited amounts for five years before it began to produce symptoms. The other began to have a recurrence of symptoms in a week. Their end results clinically were parallel to their ability to become sensitive.

What Is the Value of This Concept?

First, preventive measures can be used to avoid new sensitizations. Second, your prognosis to the patient must be made in terms of their inherent ability to tolerate foods.

Again, one may safely use a restrictive elimination diet of a few foods if the patient has a high inherent tolerance—but must avoid this if he has a low inherent tolerance.

The Clinical Importance of Masked Food Sensitization

If, during the period of time symptoms continue following the ingestion of a specific food, the patient eats an average serving of this same food, he will often, but not necessarily every time, mask his symptoms. This is due to the interaction of the previous use of the food and its repetition which results in a definite reduction instead of the customary increase of symptoms. To this lessening of symptoms I have applied the term "masked sensitization." I should like to stress that it is a clinical designation and should be considered as such.

The improvement following the use of a food to which a patient is actively sensitive will, as a rule, last from one to three and a half hours. The patient will state, on history taking, he is certain a given food is not the cause of symptoms because *every time he uses a quantity of this food he feels better after, than before eating.* Here are excerpts from actual histories: "Doctor, I know I am not allergic to corn and eggs because I always feel better after eating them than before the meal" (these two foods were the entire cause of this patient's gastro-intestinal and urticarial symptoms). Or again: "I know it is not Coca-Cola because every time I take a Coke I feel better," (Coca-Cola produced definite symptoms twenty-two minutes after test ingestion). Or the report may be of this type: "I have a peculiar asthma, Doctor. I could set the clock by the occurrence of my trouble. Every afternoon at 4:30, irrespective of what I am doing or where I may be, I have asthma," (this was due to milk; symptoms were produced ten minutes after test ingestion). A final type of report which may be misleading, "Doctor, I know I am not allergic to wheat because I ate a meal of nothing but wheat—just cooked wheat, and it was the only afternoon I had been comfortable for weeks," (wheat produced symptons six minutes after test ingestion).

I do not know why certain foods mask their symptoms in this manner. I am certain it is one of the most important clinical manifestations of food allergy. Failure to comprehend its occurrence, or clinical pattern, has produced some very unusual errors in diagnosis and treatment.

Masking may occur in foods which are eaten at intervals of seventy-two hours or less. Therefore, in taking the history of a patient one should immediately suspect sensitization to a food when the patient reports that the ingestion of a specific food results in a period of post-prandial improvement. This phenomena has many practical implications. Regardless of experience, one will find many instances in which the judgment of the presence of an allergy was in error, due to the fact its symptoms were being masked by the ingestion of the food during the reaction period of the preceding ingestion.

There is no way to be certain concerning the etiologic role of a food un-

less it is checked according to a definite test method, as previously described.[3]

Onset and Duration of Symptoms

This should be discussed under three headings. First, under test conditions. A study of 376 consecutive reactions in patients who reported for testing, free of all symptoms, showed that 95% had definite evidence of reaction within twenty-two minutes after ingestion. The greatest number, 27, reacted at ten minutes. The second largest number, 26, at five minutes after eating. There are very few reactions from food which fails to give evidence of disagreement during the test period. There are, of course, many reactions whose peak does not occur until four to ten hours after testing, but these are practically all detected by findings during the test period.

Second, the occurrence of symptoms when foods are eaten at regular meals, but not under conditions where symptoms can be masked. The reactions here are about the same as under test conditions. Symptoms are more definite if the food is eaten on an empty stomach or, at the start of the meal, than if taken in the course of the meal or as dessert.

Third, the onset under conditions of masked allergy. There is usually an immediate post-meal increase for fifteen to twenty minutes, then the patient improves for several hours. Patients usually do not recognize this early flare and only report the improvement. Sometimes there is no such increase—improvement occurring directly after ingestion, even when foods are fed singly under test conditions. The duration of symptoms will vary from a few hours to several days. Symptoms are usually not continuous, but have peaks of reaction with intervals of slight or moderate relief. During the past 14 years I have not been able to *prove* that any reaction has ever continued longer than five days after the ingestion of the food. Some authors state it may continue a year. At one time I thought that a patient reacted for thirteen days following the ingestion of grapes but subsequently learned the patient continued to use grape without knowing it (cream of tartar, Jello, baking powder). When these were eliminated, symptoms only lasted three days. There is one form of reaction that often creates the illusion of a long continued symptom. For instance, a patient known to be allergic to wheat, deliberately used cake at a party. She had been symptom free for six weeks before this. Within forty-five minutes epinephrine was needed. She was not controlled until three weeks later when three additional foods had been removed. These were foods she had eaten the previous six weeks without symptoms.

The Value of Skin Tests

If one will evaluate skin tests for foods in terms of patients clinically controlled, it will be found that the diagnostic reliability of a positive skin test is between forty and fifty per cent. The total diagnostic value[1] of routine skin tests for all foods will average around twenty per cent in large groups of patients, ie: one-fifth of all foods capable of causing symptoms give skin reactions.

The most glaring fault of food skin tests is the fact there are so many false positive tests, yet one constantly hears about the need for extracts which will give more reactions. I recently compared several kinds of food test extracts, (including one highly purified), in a series of patients who had clinical symptoms following the ingestion of food. It was found that none of these extracts were of any particular value. Vaughan[4] described the importance of skin tests with consummate finality when he stated, "They represent a point of departure in the diagnostic program." Skin tests should never constitute the formulation of any diet, unless the physician is prepared and has definitely arranged to continue the diagnostic program by additional means.

Symptoms are not necessarily related to the degree of the skin reaction. It is not correct to give foods sparingly because they have reacted plus-minus. It is imperative that *all statements made to a patient concerning his food allergy are not based upon his skin tests nor upon improvement with elimination but are based upon the demonstrable effect produced when these foods are eaten under correct test conditions.*[3] Improvement with elimination may be misleading. A patient's migraine disappeared following the elimination of wheat based upon skin testing. Following the plan given above, he was called to the office and fed wheat. Symptoms did not recur. He could, and did, continue to use wheat with impunity. His symptoms were due to malt, which was eliminated when he discontinued wheat.

Types of Food Tests Other Than Skin Testing

The basis for all diagnosis, other than skin tests, is the demonstration of post ingestive symptoms. This is true with elimination[5] or with the individual deliberate food tests.[3] The keystone of all diagnostic programs is to obtain a symptom free patient, over a period of time (days), on a known diet. When this is done, the remainder of the study consists in the progressive addition of foods, according to specific plans to compensate for changes in tolerance or sensitizations. The most reliable, as well as the most rapid method to accomplish this keystone, is to test the patient for the common articles in the diet, then prescribe a limited diet of these tested foods. Other foods are then added by the escalator system after one week, or less, if improvement occurs that soon. These dietary regimes should not be undertaken in patients with inhalant factors, until treatment for these has been effected. Since changes in eating habits are often followed by changes in the allergic status, only those foods taken regularly should be used for this test diet.

All advice to the patient, concerning a tested food, must be made in terms of previous usage. Therefore, *only foods used daily, or almost daily, should be checked individually.* Failure to obtain results with individual tests will be due most often to inaccuracy of observations and because the dynamic nature and types of food allergy are not fully understood.

When Should the Probability of Food Allergy Be Evaluated?

Since there are many symptoms and syndromes which MIGHT be due to food allergy, it becomes imperative to have some guiding criteria to ascertain when, and if, a food diagnostic program is to be undertaken. These points have been of value:

1. The presence of *itching of the nose or roof of mouth.* This is seldom, if ever, absent in the food sensitive patient. Patients will often state they do not have itching—when they do. Have this carefully checked for ten days.

2. *Exacerbations of typical symptoms:* These should occur at times during the night, ie: the patient will awaken with an attack. Again, they may develop immediately upon arising. They will, of course, occur through the day, but this is not as characteristic as the night attack.

3. There should be exacerbations for two to three days, of the typical symptoms. The last two features are due to the fact that practically every food sensitive patient is allergic to some product which he contacts at intervals and these account for these exacerbations. When two of these three criteria are present, and the symptoms are those which are often due to foods, one is justified in evaluating the presence of food allergy.

What Are the Requirements for a Complete Diagnosis of Food Allergy?

This is of importance when a physician refers a patient for diagnostic stud-

ies. It is also pertinent when food allergy is to be ruled out before doing surgery or instituting other plans of medical care (ulcer therapy).

A patient will have the possibility of food allergy explored if he is protected to inhalants, (assuming they could be a factor in the case), and is assigned a diet of foods which have not been able to increase symptoms under test conditions. For example: a patient who had had five abdominal operations in seven years, for a milk allergy,[4] was tested individually to the following foods with reactions as indicated:

Wheat	Symptoms
Egg	"
Milk	"
Potato	No Symptoms
Pork	" "
Apple	" "
Celery	" "
Beef	" "
Corn	" "

The patient was then placed upon a diet of potatoes, pork, apples, beef, celery, and corn, for a week. All symptoms subsided on the fourth day. Escalator additions revealed that oranges and several other foods caused symptoms. Continued studies showed that milk was a fixed allergy, the others cyclic, and they are now used *at intervals* without symptoms.

If a given patient has an apparent food syndrome and it does not clear upon a diet derived in this manner, a recheck is imperative. One must never forget the dynamic nature of food allergy. If, on recheck, the original tests are corroborated and the patient has not cleared, food sensitization, for all intents and purposes, has been eliminated.

Note that in this case, since the patient was food allergic it was our duty to determine the *type of sensitization* and to teach the patient how he might continue to use wheat and egg when he gained tolerance to them.

Thus, one might formulate the need of the patient in the hands of the diagnostician: First, he should have his allergies determined. Second, he must be taught what kind they are and how to live with them.

What Procedures Are of Value In Desensitizing to Food Allergy?

At present there is no effective means of desensitizing to food allergy. This statement includes any and all forms of subcutaneous or oral methods of desensitizing. The common error made in both methods is that the physician has created a masked allergy and concludes that it is desensitization. There are times when a masked allergy is clinically feasible and desirable, as well. One should know that, and not erroneously call it desensitization.

One should also know that various injections, such as vaccines, endocrine products or vitamins, will in some instances produce temporary improvement in many food allergies, due to shock. This benefit is temporary, usually exhausts itself after several months or a year, and is not specific.

During the past fourteen years, since running deliberate feeding tests, I have never seen a demonstrated food sensitization which disappared permanently with elimination of the food for a period of time. In other words, if the food was re-entered in the diet after tolerance was gained[1], symptoms would recur when the food was used for varying periods of time. In an early case, it was found that eggs were tolerated by the patient, after discontinuance for fifteen months. They were added to the diet without restriction, and sensitization recurred in two weeks. Avoidance for nine months resulted in tolerance again, which was then preserved by interval feedings for eleven years, when two weeks use of the food resulted in active sensitization again. Elimination a third time has resulted in tolerance. Tolerance was lost the second time due to dietary

restrictions during the war. It is only fair and just to the patient to explain this constancy of symptoms with continued use of foods, as then he is more apt to follow a pattern of usage, which prevents recurrence of symptoms.

Intervals of use will vary, but for many foods will be every second day, for others every third day and some five or seven days apart. Interval usage should not be practiced when the patient has symptoms following each ingestion, but only after tolerance has been achieved through elimination for several weeks, months, or years, as the case may be.

Summary

Ten cardinal factors of importance in food allergy have been detailed. These are features with which every physician should be familiar so that he may correctly advise patients as to the need for diagnosis; what this entails in time and effort, and also to advise them as to the future of their problem. An important feature, from the standpoint of history and suspicion of food allergy, is *masked sensitization.*

Failure to consider the dynamic nature of food allergy often leads to therapeutic failure.

Skin tests are unreliable in anyone's hands. *They are to be used only as the initial step in a complete diagnostic program.* Definite criteria exist in patients with food allergy and point out the need for diagnostic studies. The requirements for definitely establishing the presence or absence of food allergy are outlined. Desensitization is not of value at present. Patients should have their allergies determined originally and then be taught how to live with them. This requires one to two years of guidance—as a minimum.

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Vagotomy for Peptic Ulcer

Cutting of both vagos nerves above the cardiac portion of the stomach, with or without gastroenterostomy, or partial gastric resection, may be a much improved operation for peptic ulcer. Some two hundred *double vagotomies* have been performed and the results have been encouraging in all cases. Usually the pain and discomfort have promptly stopped, and the ulcer has apparently healed. After the operation, hunger and nausea can still be felt and the gallbladder continues to function normally. The patients tend to gain in weight.

The stomach does not empty properly after the operation. A six hour retention of food and even failures to empty in twenty-four hours are common. Surgical interns are sometimes kept busy washing out a patient's stomach, and in some cases, the surgeon has felt compelled to operate again and perform a gastroenterostomy. A dilated paralytic segment of bowel has been found at reoperation. The patient feels full, but the fact that he gains in weight shows that eventually the food goes through to the bowel. Most patients are troubled for awhile by diarrhea.—WALTER C. ALVAREZ, M.D., (Mayo Clinic, Rochester, Minn.) in *J.A.M.A.*, Dec. 21, 1946.

Clinicopathologic Conference III

A 73 YEAR OLD, retired dentist was admitted to the hospital because of a painful, swollen right knee.

Previous history: Five years ago, the right knee was painful and stiff. Three years ago, a stiff, painful back was much relieved by adhesive strapping. Two years ago, he complained of right loin pain, radiating to right thigh and leg. At that time, the back was rigid but non-tender and there was very limited motion in the right knee. X-ray of the back: Spur formation on the vertebrae and lordosis. X-ray of the knee: Osteophytes on the tibial joint surface. Repeated falls lead to increasing right knee pain and stiffness. (Fig. 1)

Examination: The heart was negative; emphysema was present; a thin, well developed man with normal pulse, temperature and respiration. The right knee was swollen, brawny, warm, mottled red; motion limited to 15°. (Fig. 2.)

Tuberculin test: Two plus; white blood count 6,000 with 68% neutrophils, 22% lymphocytes, 8% monocytes, 2% eosinophiles; urine negative; blood sugar 85 mg. per 100 cc.; blood uric acid 4.1 mg. per 100 cc.; sedimentation rate 22 mm. in 1 hour; blood serum calcium 8.8 mg. per 100 cc.; blood serum phosphorus 3.3 mg. and phosphatase 3.1 Bodansky units (all these blood chemistry findings are in the range of normal—see table of normals at end of text.—ED.)

X-ray: Extensive spur formation in lumbar vertebrae and fusing of spurs between III and IV lumbar vertebrae; irregularity of adjoining surfaces of vertebrae. Right knee showed destruction of the femoral joint surface, a narrowed joint space and a fracture line through the femur.

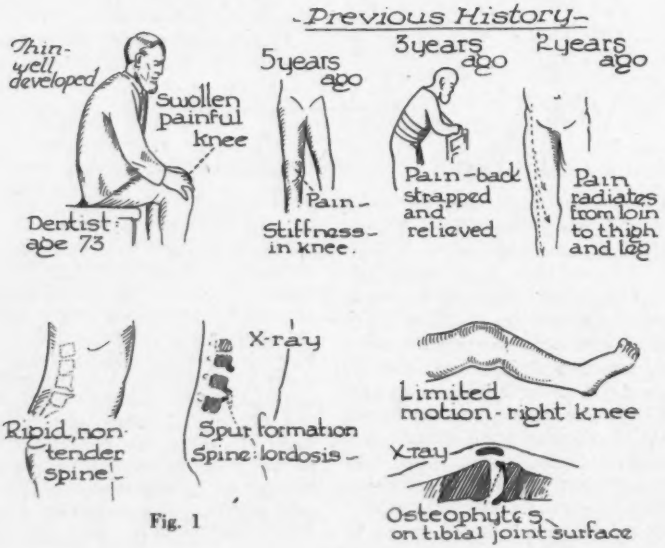
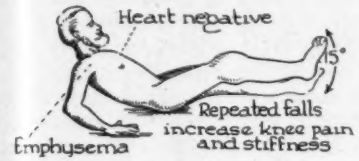


Fig. 1

Aspiration of pus from the right knee revealed 34,500 leukocytes with 92% polymorhphonuclears, 3% lymphocytes, 5% monocytes, mucin, no sugar, no growth on culture. (Fig. 3).



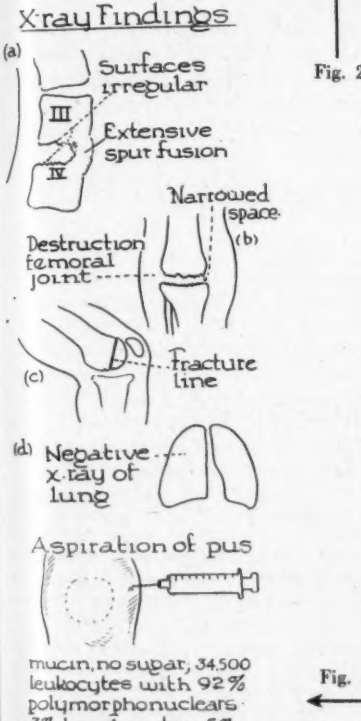


Fig. 2

Fig. 3

Discussion

Pains in the low back and groin, and radiating to the thigh are typical of lumbar spine involvement. Back pain usually disappears after complete fusion. Chronically progressive arthritis may be due to chronic infection, as tuberculosis is or rheumatoid arthritis.

Primary Bone Tumor	*Not likely at this age. Pus not found*
Metastatic Malignant Growth	*No primary lesion Long history*
Pyogenic Infection	*No acute symptoms Long history sterile pus*
Chronic Osteomyelitis	*X-ray findings rule it out*
Paget's Disease-osteoblastic tumors	*Phosphatase 31 units rule out*

This spine is immobilized due to fusion of the spurs which bridge the vertebrae. After such "natural" fusion or after artificial (surgical) fusion, the lesion usually does not progress.

Diagnosis:

The diagnosis of a destructive lesion plus degenerative changes is supported by the clinical symptoms here:

1. *Severe pain is not usual in degenerative disease of the spine, and always requires an additional diagnosis.*

2. Rapid progression of destruction and decalcification of the knee does not occur in rheumatoid arthritis, without other joints being involved by that time.

3. Because of the rapidity of progression, the degree of destruction and decalcification of the bones around the knee joint, the localization and character of the fluid, a chronic infection is most likely. The violent tuberculin reaction at high dilution is suggestive of active tuberculosis.

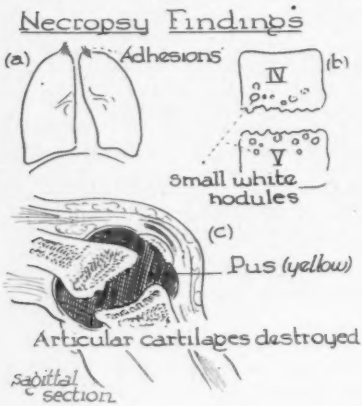
Death

On the 5th hospital day, a sharp, transient precordial pain appeared,

which radiated to the back. It recurred in a few minutes, dyspnea appeared, the pulse became imperceptible and death occurred.

POSSIBLE CAUSES OF DEATH

(1) Pulmonary embolus	*Phlebitis likely in older man put to bed, leg suspended, clot carried to lung.*
(2) Acute coronary thrombosis	*Substernal pain*
(3) Dissecting aortic aneurysm	*Pain radiated to back*



Necropsy

1. Massive pulmonary embolus.

2. Tuberculosis right knee and spine. The IV and V lumbar vertebrae contained many small, soft, white nodules but were not compressed. The knee cavity was filled with pus; synovia were rough and redundant; articular cartilages of femur, patella, tibia were partially destroyed.

Sections of vertebrae and knee showed tuberculosis microscopically; guinea pigs inoculated with the material from the knee, died of tuberculosis. The patient had no other signs of tuberculosis except for apical pulmonary adhesions.

Normals for blood chemistry examinations:

Blood suger 80 to 120 mg. per 100 cc.
Blood uric acid 2 to 4 mg. per 100 cc.
Blood serum calcium 9.5 to 11.5 mg. per 100 cc.
Blood serum phosphate 3 to 4.5 mg. per 100 cc.
Blood serum phosphatase 1.5 to 4 units per 100 cc. (Bodansky)

(Material condensed from a clinicopathologic conference presented at Massachusetts General Hospital and published April 19, 1945 in *New England J. Med.*—Ed.)

Acute Coronary Insufficiency

Aminophyllin should be injected intravenously only when congestive heart failure appears. Pain should be relieved with as little morphine as possible being used. Do not give heavy doses of sedatives and cut down the patient's fluids as this increases the volume and flow of blood and makes thrombosis more likely.

Dicumarol may be a real help in the treatment of coronary occlusion; appearing to lower the mortality about one-third, but can only be given in a hospital where the prothrombin level can be checked daily. The dosage is 300 milligrams by mouth repeated daily until the prothrombin level reached 50%. 100 milligrams is then given daily until the prothrombin level reaches 35%. The treatment is stopped when the prothrombin level reached 50% and again 100 milligrams is given until the level reaches 35%. It is maintained between 35 % to 50% for four to six weeks.

Exercise is important. After the fifth or sixth day the patient should take daily deep-breathing exercises followed by getting up the patient as soon as possible. An adequate diet and the prevention of constipation should be maintained from the start.

Sex: Graduate Course

QUESTION 1. Why should I, as a physician, be interested in sexual matters of my patients?

Answer: There is not a day that goes by that a patient with sexual worries does not enter your office, but you will not learn about them unless you *ask*. The young girl about to be married who wants to be fitted for a diaphragm, the adolescent boy who is afraid that his pimples are due to masturbation, the married woman who detests intercourse and who has resultant pelvic pain, the older man who is worried about his potency, the husband who realizes that his wife does not enjoy intercourse but who doesn't know what to do about it, the girl or woman who is afraid of becoming pregnant.

Often their symptoms are vague or apparently related to some other system or organ of the body, so much so that unnecessary treatment or operations are carried out. One shudders at the reports of hundreds of surgical procedures for dysmenorrhea performed by unthinking, mechanically-minded surgeons. Surely, it is poor surgery to remove a portion of the pelvic plexus when the dysmenorrhea is due to the shock and surprise which occurred at the first menstruation. So often, mothers do not prepare their daughters for the mental impact that comes with the onset of menstruation and the approach of adulthood.

Question 2: What is the ideal mating?

Answer: No better definition can be found than that of Melicow (M.M. Melicow, M.D., Department of Urology, College of Physicians and Surgeons, Columbia University, New York City): "The ideal sex relationship occurs when two ardent, healthy, enlightened individuals of opposite sex, anatomically sufficient and physically, spiritually and emotionally harmonious, cohabit under mutually satisfactory conditions, the pleasurable experience lasting for a length of time sufficient to allow for a simultaneous thrill-bearing orgasm which is followed either by an exaltation of spirit and general somatic well being, or by a delightful animal fatigue. It follows, then, that the ideal coitus is rare and deviations are common. The greater the deviation, the greater the sexual inadequacy. The factors affecting potency are numerous, and (the absence of) any one factor however trivial may weaken or suspend potency:"[1]

There are numerous obstacles to achievement of such a perfect physical relationship, beginning with faulty parent's admonitions in childhood, ignorance of many aspects including the play period preceding intercourse, the fact that women can have as pleasurable climax as men, the fear that masturbation may have affected potency and enjoyment, fear of pregnancy, poor health affecting either partner or the loss of physical attraction (fat, baldness, lack of cleanliness both general and local and so on).

Question 3. The physician asks, "What can I do about sexual maladjustments or deficiency?"

Answer: 1. Being on the lookout for them will explain many puzzling cases, will avoid unnecessary treatment and operations and will call conscious attention of the patient to a difficulty which often has gone unrecognized.

2. As in many psychosomatic complaints, letting the patient talk it over will often be of definite benefit. Getting a worry out in the open is a relief. In many cases, the patient was sure that the problem was of major importance, and explanation and reassurance by the physician will be sufficient.

For example, the idealistic type of man may be impotent early in marriage

or an affair because of his tendency to place women on a high platform, far above such seeming vulgarities as physical relationships.

3. If a major psychic problem is present, frankly advise consultation with a psychiatrist. The psychiatrist preferably should be a well balanced individual, who is happily married.

4. *Don't* tell the patient that everything is normal physically, but continue to massage the prostate, make applications to the cervix or urethra or in any other way continue to direct the patient's attention to the sex organs. If treatment is necessary, carry it out and then *stop*.

5. If the patient is intelligent, have him purchase and read one of several well written books for the laity about getting along together, about normal sexual life and so on. Loaning out books from physician's libraries is unsatisfactory for the patient and expensive for the physician because so few of these books are returned; instead they are loaned out to a wider circle of friends (*Clinical Medicine* will publish a list of such books for the patient, and another list for the physician, in a later installment of the Graduate Course).

6. Don't expect to make over the lives of your patients with a few well chosen words of advice. They are often in fixed grooves of conduct with appropriate mental explanations to themselves, which must be respected, mutually investigated by the patient and the physician, and slowly altered, if at all.

7. Don't try psychoanalysis. As now performed, it is an exceedingly difficult type of therapy whose technic varies among its practitioners, whose rate of cure and relapse is unknown and time of whose termination is exceedingly variable. Many conscientious physicians feel that the average practitioner should concern himself with adult variations and omit attention to infantile sexuality, penis envy and so on.

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[1] Melicow, M.M.: Coitus, Impotentia and Angina Pectoris. *New York S.J.M.*, June 15, 1945.

Sexual Deficiency

By WALTER C. ALVAREZ, M.D.
Mayo Clinic, Rochester, Minnesota

THE wise physician should know a great deal more about sexual matters than he usually does because the troubles of so many of his patients are due to sexual unhappiness.

I haven't any faith in most of the Freudian ideas about bizarre sexual traumas in infancy and childhood. What certainly is common is the unhappiness of the woman who is frigid or is married to a man for whom she has no love. Perhaps at first there was some love but this later was destroyed by the mate's drinking or his unfaithfulness or his thoughtless neglect, or because of his bringing home a venereal disease. Many of the neuroses which the consultant sees each week are due largely to this sort of thing. Usually, I think, the troubles are not due so much to the lack of a satisfactory sex life as to the daily loneliness and lack of happy companionship or to insecurity or worry about getting a divorce. In many a case, the woman would be happy enough if the husband never came to her bed.

Unnecessary Surgical Procedures

In thousands of cases, patients receive a diagnosis of colitis or ptosis or have to submit to a futile laparotomy

when if the physician had only suspected the presence of a sexual neurosis or of marital unhappiness and had asked a few questions he would have learned about the real cause of all the troubles.

As I write this, I am called away to see a woman who was sent to me, by a well trained man, with a diagnosis of ulcerative colitis. The proctoscopist and the roentgenologist here found a perfectly normal colon. What is the trouble? The trouble with her is that eleven years ago, on her wedding night, her husband who thought he had been cured of gonorrhea, infected her badly. She has never recovered from the shock of this or from the resentment which came in her heart. As a result she has spent many sleepless nights thinking of divorce and wondering what to do. Whenever she has an unpleasant argument with her husband, she passes a large quantity of mucus which has been thought to be pus. She has already submitted to an appendectomy which did not cure her. Obviously, one cannot expect her to have any health until she makes a decision in regard to her contemplated divorce, and then sticks to it. This is the sort of sexual problem which I run into every week. Perhaps it is not so much a sexual problem as a problem of living happily.

Naturally, some knowledge of the psychology of sex is necessary when it comes to trying to help a man who has a psychic impotence. There are many persons also who worry themselves sick over sexual sins and particularly over having masturbated. The average physician is woefully uneducated in regard to these matters, because they were never discussed with him when he was in college. Unfortunately, there is a great deal of prudishness among medical men and hence there is no adequate study of sexual troubles in any medical school that I know of.

I have just seen a man with impotence. He has been from one urologist to another, all of whom have passed sounds, have massaged his prostate, and looked into his bladder. What is his trouble? He was perfectly all right until one night when after engagement to a nice girl he went back to see his old mistress. He felt so conscience smitten about this that he was impotent, and later when he married he was impotent with his bride.

Sex and the Middle Aged Man

By ARTHUR H. STEINHAUS, M.D.

Professor of Physiology, George Williams College, Chicago, Illinois

THE editorial entitled "Sexual Deficiency" is excellently done. I am in total agreement with it.

It is my opinion that many of man's worries and difficulties are associated with his adjustment to his own sex nature and the way this influences him and his reaction to his environment. Although there remains a great deal to be done, I think we are making fairly good progress in helping young people to pass from childhood into adolescence and young adulthood. At least, we have a pretty good idea of how this should be done and many good illustrations of accomplishment.

I think, however, that at the other end we have hardly begun to scratch

the surface. The middle-aged man stands ignorantly and innocently and full of fear for his on-coming old age. Changes take place in his body which he does not understand, and he worries about them a great deal. At one time we thought the adolescent was the big problem. It is my belief that the more pathetic figure is the middle-aged man on the threshold of old age. Another way of putting it, we are fairly competent in helping young people to learn to begin to live with sex in their body, but have done very little to help older people to learn to live without sex in their body, or with a diminishing sexual vigor. It seems to me that this is a field in which the physician can be very helpful to many of his patients.

I think the problem has been more squarely attacked for women than for men. Of course, the giving of the male hormone will always be with us. I am not, however, making a plea for this. I am more interested in how men can be helped to adjust themselves without the hormone from external or internal source. This is primarily a psychological problem.

It seems to me we need a great deal of data that has not yet been collected concerning the kind of ache, pain, the kind of mood and depression, the kind of fear, and so forth, that characterize the mental and emotional life of the man passing from an age of sexual vigor into one of declining sexual vigor.

DISCUSSION

M. M. MELICOW, M.D., Urologist.
Columbia University, New York, N. Y.

I AM in accord with your ideas on the subject "Sex Deficiency." The medical profession has awakened to the importance of the psychosomatic tie-up in the geneses of many symptoms and the resistance of the latter to treatment unless each element is recognized and evaluated. The psycho-sexuo-genital association is not well understood, and unfortunately, often disregarded.

An excellent example of the above is the haphazard and superficial manner in which physicians palpate genitalia in routine examinations, and is well illustrated by the incidence of testicular neoplasms in the U. S. Army during World War II. Such growths, as you know, are amongst the most virulent in neoplasia. The mortality is extremely high. To those of us who have studied the subject (I am the pathologist in Urology at Squier Urological Clinic of Medical Center, Columbia), it is obvious that only early diagnosis and prompt removal, before metastases occur, can give the patient the best chance to survive. Yet over 1,000 cases of tumor of the testis were found among young men after they were inducted into the armed forces. I feel certain that a large percentage *had* their tumor when they appeared for their physical examination. Here was a chance to find the early case. Yet that did not happen because examination of the genitalia was in most cases very cursory.

I find, in discussing sexual difficulties with some of my patients (especially men) that it was early in life, in adolescence, that they developed feelings of inferiority regarding their sexual apparatus (they often felt that the size was inadequate). Others developed difficulty shortly after marriage, especially those who had been continent. It is at these crucial stages that a sympathetic and understanding approach by the informed physician can prevent or clear up psycho-sexuo-genital misinformation and malfunctions.

Cesarean Section: Control of Bleeding

By R. L. GORRELL, M.D.

Clarion, Iowa

THE cesarean section should be a calm, relatively bloodless procedure instead of the frantic, speedy, traumatic one so often associated with the classical technic.

DeLee's technic of low cervical section (laparotrachelotomy) is a simple procedure for any one who performs abdominal surgery. Bleeding is minimized because the lower uterine segment is a thinner, less vascular wall than is the fundus.

By infiltrating the line of the proposed incision with 3 cc. of pituitary extract (obstetrical) diluted to 5 or 6 cc. with physiologic saline solution, the amount of bleeding is markedly diminished. This point is not original with me, having been first used by F. L. Wilson of Sioux City, and published by us 11 years ago in the *American Journal of Surgery*. The illustrations indicate the important points.

One step that is omitted in the sketches is the suturing of the peritoneal flaps around the field of incision so as to wall it off from the general peritoneal cavity.

Even marked bleeding from the uterine cavity has responded well to the temporary packing of the uterus and firm massage of the uterus down on the pack.

The use of thrombin and fibrin foam should provide perfect hemostasis along the line of incision and obviate the need of a number of sutures. That it has not been tried, even though the material is immediately available, is proof again that we tend to be satisfied with what we are doing and how we are doing it.

When this technic was first suggested, there was some criticism of the use of pituitary solution. No complications have arisen as a result of its use, as evidenced by postoperative courses or by re-operation on the same patients, over a ten year period.

227 First Avenue, N. E.

Addenda

Bleeding from the uterine cavity may be controlled by packing with oxidized gauze which is absorbable and hemostatic. It is now available from Parke, Davis and Company, and from Johnson and Johnson.

In response to letters to obstetricians, Franklin M. Kern, of Philadelphia writes, "I have used the technic with satisfaction on several occasions." S. Leon Israel of Philadelphia writes, "It is my impression that the technic serves to diminish the loss of blood from the uterine wound. Lately, I have achieved similar results from the administration of ergonovine intravenously, just as the uterine incision is being made."

References

1. Personal communication.

2. Waters, Edward G.: Disputed Indications and Technics for Cesarean Section. New England J. Med., 234: 849 (June 27) 1946. "The loose peritoneum at the lateral edges (of the transverse cesarean section) incision are dissected to expose the uterine arteries. These are ligated, but not cut, with ties of number 2 chromic catgut. Within a few minutes, the flabby non-contracting uterus exhibits fibrillary contractions and assumes the crinkled or crepe-paper appearance that indicates response to induced anoxia."

(On the sketches shown, the umbilicus is below and the bladder is at the upper angle of the incision.)

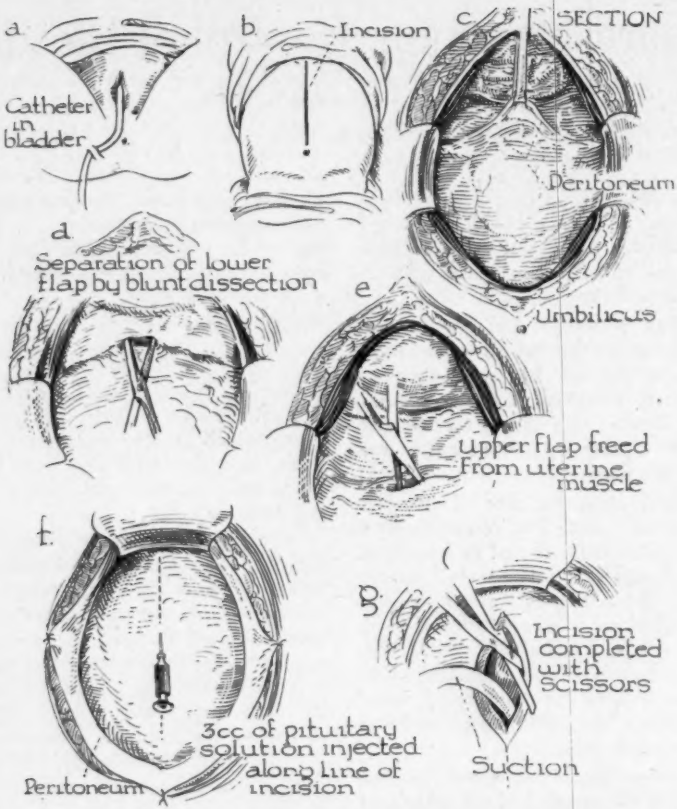


Fig. a. A retention catheter is left in the bladder during the operation. After one or two experiences of working around a full bladder, the surgeon soon realizes the reason.

Fig. b. The incision extends from the umbilicus to the pubes, remembering Falk's dictum, "One inch below is worth two inches above".

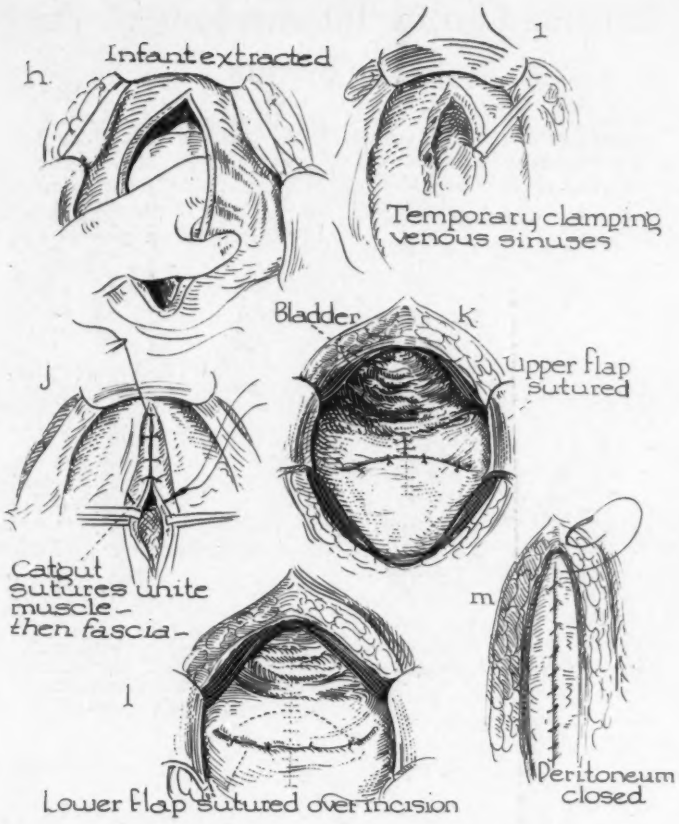
Fig. c. The loose fold of peritoneum just superior to the bladder, on the lower uterine segment, is picked up with thumb forceps or an Allis forceps.

Fig. d. The lower flap of peritoneum is separated from the uterus by inserting scissors under it and separating them gently. This blunt dissection is carried out until 6 inches transversely are freed. If the scissors are introduced in the proper cleavage plane, the peritoneum separates readily, and this is especially true if the patient has been in labor for a few hours. Any slight bleeding can be controlled by gauze pressure or by leaving gauze under the lower flap, while the upper flap is being dissected free.

Fig. e. The upper flap is separated from the uterus in the same manner, as high on the uterus as possible. It is this flap that is so easy to "buttonhole", by poking the point of the scissors through it, where it is so firmly attached to the uterus.

Fig. f. A syringe is filled with 3 cc. of pituitary (obstetrical) solution and an equal volume of physiologic saline solution, a 24 or 25 gauge one inch needle attached and the solution injected along the line of proposed incision in the lower segment, into the uterine muscle.

Fig. g. A small nick is made through the uterine wall with a scalpel, down to the membranes or through them. The incision is completed with sterile, ordinary bandage scissors, the protected point avoiding any injury to the baby. If suction is available, as with the ordinary tonsil suction machines, one may aspirate amniotic fluid and blood as the incision is made. Otherwise, it is best to wall off the field with long gauze packs before incising. Because of the



absence of marked bleeding, one may cut the uterine wall with precision and under direct vision. The bladder is protected by being retracted, together with lower flap, by a round retractor.

Fig. h. The infant is extracted by combined pressure on the fundus (the hand presses on the abdominal wall, not inside the peritoneal cavity) and by directing the infants head with the hand inside the incision.

Fig. i. Temporary control of bleeding may be obtained by clamping the open venous sinuses with Allis forceps or with intestinal clamps. After removal of the placenta it may be necessary to massage the uterus to control bleeding from its interior, or to pack it and to massage over the pack. Waters of the Hague Maternity Hospital, Jersey City, N. J. writes [1,2] that in cases of severe hemorrhage he ligates the uterine arteries. DeLee has suggested the temporary compression of the uterine arteries with rubber covered clamps, but this pressure would include the large veins and might lead to thrombosis and later pulmonary embolism.

Fig. j. Interrupted catgut or cotton sutures unite the uterus, two layers of sutures being adequate. The needle does *not* penetrate the endometrium, as it appears in the illustration.

Fig. k. The upper peritoneal flap is brought down and sutured with several interrupted sutures as low as possible.

Fig. l. The lower flap, containing the bladder is brought up and sutured as high as possible, so that the upper flap is covered.

Fig. m. The peritoneum is closed with continuous catgut or interrupted cotton.

The Hanging Cast for Intertrochanteric Fractures of the Femur

The hanging cast has many advantages in the treatment of badly comminuted intertrochanteric fractures and for patients who are not suitable for internal fixation.

William E. Abbott, M.D., Wayne University College of Medicine, Detroit, Michigan, and *Clinical Medicine's* artist, T. Lozier, show the technic in step-by-step illustrations:

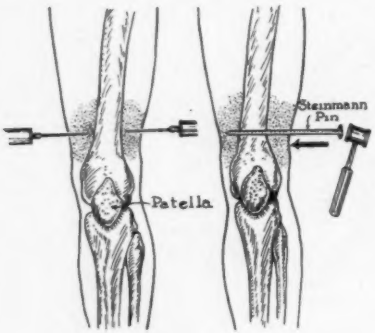


Fig. 1. Injection of local anesthesia and insertion of a Steinman pin through the lower end of the femur.

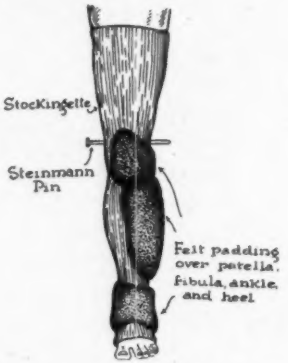


Fig. 2. Stockinet is placed on the leg and felt pads are placed over the bony prominences (the pads are exaggerated), patella, fibular head, ankle and heel.

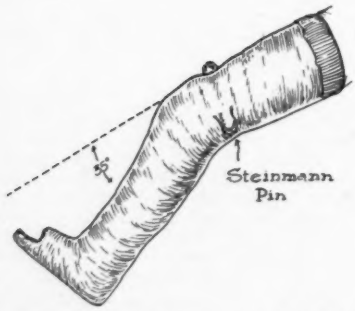


Fig. 3. A mid-thigh plaster cast applied with the knee flexed at 35 degrees.

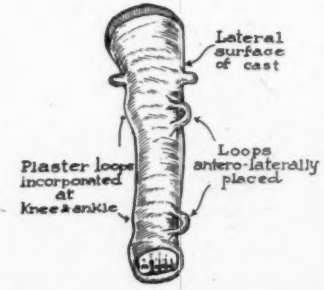


Fig. 4. Plaster loops are made from narrow plaster strips and incorporated into the cast at the knee and ankle; they are placed on the anterior and lateral aspect, so that traction will correct the tendency to external rotation.

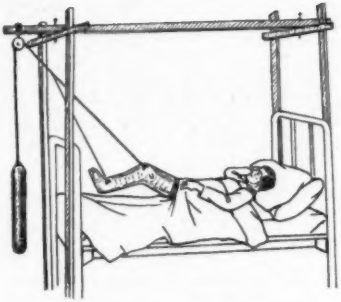


Fig. 5. Traction cords are applied to the loops and 20 to 35 pounds are applied. Abduction is obtained by placing the pulley on the affected side.

Fig. 6. Traction is not needed when the patient is in a wheel chair (for 2 hours twice daily). Crutches are used after the third week.

DISCUSSION

"Figure 3 should show the cast extending over the foot and holding it up at about a right angle.

Since Dr. M. D. Johnson (*Surg. Gynec. and Obst.*, 77:598, 1943) devised the method I believe that this fact should be mentioned. Our series was a trial of his method without modifications.

It is also important to emphasize that it is not sufficient to apply the cast and then neglect the patient. These cases should be seen frequently especially during the first three weeks to see that the cast is hanging properly (adequate weight, rotation and abduction). The results will obviously be poor if the patient and the injured leg are not handled properly when in bed or in the wheel chair."—William E. Abbott, M.D., Detroit, Mich.

Orthostatic Hypotension

Orthostatic hypotension is a syndrome consisting of severe weakness, dizziness, normal blood pressure in the sitting or reclining positions, conspicuous fall in blood pressure in the erect position, impairment in sweating and aggravation of the symptoms in hot weather. It is probably a result of unstable vaso-motor function and may or may not be associated with disease of the nervous system. Additional factors are the inability to maintain an adequate return of venous blood to the heart and hemoconcentration in the upright position. Suggested therapeutic procedures include: (1) Mechanical appliances such as abdominal and leg binders; (2) Elevated head during sleep; (3) Avoidance of strenuous activity during hot periods; (4) Use of such vasoconstrictors as adrenaline in oil, ephedrine, amphetamine, paredrine, paredrinol and neosynephrine; and (5) desoxycorticosterone intramuscularly in oil, 5 to 10 mgms, every 5 to 7 days, supplemented by sodium chloride, 20 grams in equal doses during the 24 hours. Caution must be observed in the use of desoxycorticosterone acetate as in Addison's Disease since overdoses lead to hypertension, edema formation and rarely to congestive heart failure.—C. D. Marple, M.D.

"DOCTORS ON THE TRAIL"

By ANSEL F. HALL

THIS is a tale of five adventurous doctors—the story of how they went exploring in the Navajo Indian Reservation and the southern Rockies. They helped to search for prehistoric ruins in the wild "Four-Corners country" of Arizona, New Mexico, Utah, and Colorado; they prospected for gold and rare minerals at timberline in the La Plata Range; they assisted in excavating an ancient buried city; and they came back to civilization bearing witness that there is still a vast, colorful, open frontier to tempt sturdy young Americans—and doctors, too—to push out into the unknown. But let us not get ahead of our story. You members of the medical profession must first know how I came to write about these adventures.

Your Editor, himself an explorer in spirit and in fact, spent several days with us in Mesa Verde National Park amid the cliff dwellings and other spectacular prehistoric ruins left by a vanished people who developed a flourishing stone age culture here in the American southwest a thousand years ago. During the evenings by our fireside we discussed many things, but always the subject sooner or later drifted around to my hobby of the past 20 years—exploration. We talked of our unique experiment of giving boys of high school age an opportunity to participate in these adventures.

We talked of many expeditions to far places. There was, for example, the story of the eight lads who climbed down into the depths of the Grand Canyon to discover footprints of huge reptiles that lived long before the dinosaurs —and the story of the 18 young mountaineers who helped Dr. Francois E. Matthes to map the extent of the ancient glaciers of the Sierra Nevada—and the story of the eight boys who, under the leadership of Bayne Beauchamp, landed on the beach at Skagway, backpacked over Chilkoot Pass, and followed the trail of the gold rush of '98 down the Yukon to the Klondike and all the way to the Arctic Circle—and the story of the 13 young men who helped to excavate a portion of the fossil forest of the Lamar in Wyoming—and the story of the three youths who went with Dr. Harvey Stork to Central America to collect skeletons of those giant reptiles, the iguanas and crocodiles, and, incidentally, to dig in prehistoric burial grounds in search of pottery and pre-Columbian gold.

What stimulated your editor's interest even more than these tales of the past was the fact that at the time of his Mesa Verde visit twelve young men and their leaders were outfitting there for an expedition into the Navajo country about 150 miles to the southwest. A few days later, led by an archaeologist and a geologist, they were to shove off on a two-weeks expedition into Monument Valley where they would be searching for prehistoric ruins, hunting for fossils, and, as a climax, attending the annual healing ceremony and sing of the Navajo Tribe in the Lukachukai Mountains. With this expedition was Dr. Suren H. Babington, whose yen for the wilderness had led him to volunteer for many a similar adventure in the Indian country with our archaeological scouting parties and excavating crews. Incidentally, I am looking forward eagerly to the appearance of his book **"A Medico on the Mesa"** which will soon be off the press.

A few members of the medical profession are each year invited to participate in this program of exploration. First, however, I must introduce the Explorers' Camp, which is the name I have adopted for this hobby of mine.

So far as I know, the Explorers' Camp is unique in that its program is built entirely around exploration, following the pattern of the scientific expeditions that I put into the field while serving as Chief Naturalist for the National Park Service. The basic unit for these small exploring expeditions is made up of two or three scientists as leaders—perhaps an archaeologist, a geologist, an engineer, or a biologist—plus 12 picked boys of high school age, capable fellows who are not only interested and eager for the ad-

venture, but are also made of the right sort of stuff for future leadership. With each field party is a camp cook, sometimes one or two horse wranglers, and always a "medical attaché."

Occasionally some of my practical-minded friends have questioned the necessity for including a medical staff member in each field party. They have frequently pointed out the fact that during the past 20 years, more than 500 young men and their leaders have taken to the field with our expeditions without ever a major accident or serious illness. "We know" they say, "that your medical men serve as volunteers but during all those years it must have cost you thousands of dollars for their field expenses." Perhaps we shall never experience disaster, but who shall put a commercial value on being prepared for an emergency?

I am personally influenced by several less tangible considerations in choosing to have a doctor on the staff of each exploring party. Call it sentiment, or personal opinion, or anything you wish—but my contention is that for reasons entirely apart from medical skill there should be a physician with every field party. Pick an M.D., with a spirit of adventure and you have an ideal field companion. The big open spaces of desert and mountains give him a buoyancy of spirit that must be in part a natural reaction to weeks and months in close contact with office, and hospital, and sick room. Invariably he is keenly interested in the field program, be it in archeology, geology, biology or other branches of science, and usually he chooses to take an active part as a member of the exploration "team." But by the evening camp fire—Ah, there he is in his element! His training in science has given him a background for serious discussion—and when campfire sessions turn into paths of philosophy, conjecture, and tales of weird adventure he is, like as not, one of the last men on his feet—or shall we say "in voice." Yes, experience has taught me that there should be a medico in every group—for morale and good fellowship as well as for physical safety.

Last spring I sent out an invitation to members of the medical profession in Texas and Oklahoma. There were many volunteers. Here is a thumb nail sketch of some of their adventures:

Dr. Theodore A. Kennedy of Legion, Texas, writes: "In the Summer of 1946 I was in much the same position as many other physicians—tired from concentrated work of the war years and ready for a vacation. But I was more fortunate than any doctor I know by reason of the fact that I was invited to join the field staff of the Explorers' Camp.

"I expected Durango to be a picturesque mountain town but when I arrived it looked like the wildest camp of the gold rush days. However, I soon discovered that most of the tough-looking bewhiskered "miners" were substantial citizens who were reverting to type for their annual Spanish Trails Fiesta.

"Dr. Stork, Field Director of the Explorers' Camp, met me with the jeep and drove me some 30 miles up into the La Plata Mountains where base camp occupies the buildings of the historic old Gold King Mine. There I met 35 explorers of high school age and about 14 adult leaders, most of them experienced scientists whose specialties were geology, archaeology, biology, engineering, and a number of other interesting fields of knowledge. The boys were just finishing their first 10 days of preliminary orientation, practice in camping skills, and physical conditioning.

"One of my first impressions was that the chief feature of the Camp was *eating*. I never saw such huge quantities of food nor such insatiable appetites! Little did I suspect that before many days I would be holding my own with the best of them!

"Next morning the wranglers were up long before daylight rounding up saddle and pack horses. Then there was an exciting hour or two when huge piles of provisions, camp gear, dunnage bags, and scientific equipment were carefully balanced on horses' backs and battened down with the Diamond Hitch. This was of special interest to me because I was attached to the high mountain geological and prospecting party which would take to the field under the leadership of Richard Stultz, of Ohio State College.

"Our trail led up slopes covered with

spruce and aspen and we finally topped the ridge at Gunsight Pass at an altitude of 11,500 feet. At the foot of the western slope we dropped down into a lovely little mountain valley where we were to hunt rare minerals and prospect for gold during the next ten days.

" . . . we rolled out as the sun was peeping over the high purple summit of Hesperus Peak. While some of the boys were mountaineering and others out searching for specimens I decided to try my luck at trout fishing. Within a few hundred yards of Camp I had a nice string of Rainbow—and did they taste good fried to a crisp golden brown in bacon grease!

"The boys seemed to me to be unusually alert and interesting—the natural outcome, no doubt, of their having been 'hand picked' for this summer of exploration. They were certainly a cosmopolitan lot. In this group the twelve boys were from ten states. Everyone was busy at his part of the group project—but of course there was ample time for many types of outdoor recreation—and the evening campfires were superb. The wranglers, the party leaders, all of us in fact, enjoyed the songs, the tall tales, and even the inconsequential stunts we invented for our own amusement. Memory of those high mountain camp fires will help me through many a trying session in hospital and medical office during the winter months; and I hope that, come spring, I may again spend a few weeks with a group like that."

Another member of our camp medical staff was Dr. E. M. Loyd of Taloga, Oklahoma. In his post-season report he wrote:

"It was my good fortune to be assigned to the desert exploration party. Traveling by jeep, troop transport truck, and motorized field kitchen, they were to make a 1500-milk trek through the Navajo Indian Reservation searching for petroglyphs — primitive pictures, painted or pecked on the cliffs by the ancient people. Leader of the expedition was Arthur Woodward, Director of History and Archaeology for the Los Angeles Museum. All of the photographs and tracings of the pictographs would be important for the research collections and some of them would be worked up into museum exhibits.

"Our exploration of the Mancos Canyon was a marvelous experience. The boys were always eager to obtain knowledge of the prehistoric civilization that once flourished here as evidenced by the many inscriptions found on the almost perpendicular cliff walls and the many cliff dwellings, some of which are still in a fair state of preservation.

". . . . our route was now replete with splendor, miles of painted desert, more miles of precipitous cliffs and rugged terrain. Here, there and everywhere lone spires lifting their heads hundreds of feet into the air, stood as mute sentinels of the millions of years of erosion that had taken place. On our way we passed the mammoth spire known as Shiprock, hardened heart of an old volcano, which rises seventeen hundred feet above the valley.

". . . . Chaco Canyon was some 85 miles distant. We arrived at the trading post in the afternoon and made camp. As was the usual custom each individual selected his own 'sleeping apartment' and it consisted of what he thought was the softest sand hill near camp. Personally I thought I was doing fine as my muscles were beginning to relax from the effects of the severe beating they took during the first explorations in Mancos Canyon. My waist line was by this time so much reduced that I had discarded my belt and considered buttonholing my trousers in order to hang them on the horns that seemed to be growing on the anterior superior spines of my illei, said growth being induced by digging them into the sand as I turned in my sleep at night."

Follows an intriguing account of hunting for pictographs in Chaco Canyon—of visiting the spectacular Pueblo Bonito, the huge 5-story prehistoric apartment house—of a "chummy" rattlesnake that invaded camp and was skinned and roasted by an enthusiastic young herpetologist—of a budding romance at a distant trading post that almost started a camp feud—and of the discovery of a huge canyon that offers irresistible lure for next summer's fieldwork.

Time and space do not permit our quoting the account of those intriguing

adventures in full; we must pass on to the experiences of the junior member of our medical staff.

Dr. R. E. Forrester of Moran, Texas, had looked forward for years toward just such an adventure-filled summer as was offered by the invitation to take to the field with an Explorers' Camp expedition. But unfortunately as summer approached he had on his hands more than the usual demands from expecting mothers, incipient surgery cases, and what-have-you. He therefore recommended Bob Junior, whose medical education changed from the academic to the practical when he joined the Army in 1942. Three years and a half of war medical service had given him experience enough to care for any of our expeditions. But what I like best about the prospect of his being with us was a letter from Bob himself saying, "My main interest in your expeditions would be in the archaeological field, as the prehistoric American Indian has long been a center of study with me."

When he arrived at Gold King Camp in the La Plata Mountains Bob requested assignment to the far distant archaeological excavation camp. Atop a high unnamed mesa some 100 miles to the westward we had located what promised to be a huge, possibly a very spectacular, ruin. The first exploratory trenching was to be done under Professor Sam Tobin of the University of Utah and Bob was determined to be in on this "treasure hunt" amid the ruins of that buried city. Here are a few fragments of his report on that exciting experience:

"Our group (15 boys from 13 to 17 years of age) drove to Cahome near the extreme southwestern part of Colorado. Here we took off to the westward on side roads which finally ended in virgin pinyon-juniper forest. From here on the boys pitched in and cleared a 'way through' to our proposed campsite a mile or so farther on. We located our camp on the rim of an unnamed mesa jutting over Cahone Canyon. Then we made a preliminary tour of inspection. The ruin itself proved to be tremendous. It stretched in crescent form, about three-fourths of a mile long and with about one-quarter mile between the horns of the crescent. The ruins were almost all fallen, the entire city practically buried except for walls that rose above the surface in places. The ground was actually littered with broken pottery. Mr. Tobin was to start the excavations with a long-time program in mind perhaps 15 or 20 years of intensive investigation. We marked off an area of the smallest mound for this season's preliminary excavations.

"The boys were allowed to sleep in caves under the rim of the mesa-top, shelters which later turned out to have been used for dwellings by the very ancient Basketmaker People. This contact was certainly stimulating to the boys. At night, after supper, we always had a big camp fire on the rocks at the canyon rim when Mr. Tobin would explain to the group about the country, the ruins, and the culture of the long vanished prehistoric Indians. All of this gave a marvelous background to the excavations and things discovered during that day. Thus the boys lived in constant association with archaeology and this tripled their interest in the workings.

"Our archaeological work was started by digging an exploratory trench in the trash mound by the smallest house-ruin of the group. The trench was one yard wide, and was carried down six inches at a time, in levels, revealing fragments of pottery, weapons, beads, and most exciting of all, the skeleton of a woman. I judged from the bone development that she was about 20 years old. She was laid on the back, head turned forward, knees flexed and turned toward the left. The right hand was on the right shoulder, and the left hand on the pelvis. A pottery dish was by her head; undoubtedly it had held a food offering to the dead. We removed the earth from around the bones, leaving the skeleton in position as buried for photographing. You may be sure the boys got a big kick out of this bit of excavating."

After telling of a 300-mile trip into the Lukachukai Mountains to attend the annual Navajo Field Day and sacred dances, Bob's report continues:

"As the summer wore on excavation progressed rapidly. The first dwelling compound was outlined and half of its twelve rooms cleaned out to the floor. . . . Many types of pottery and innumerable other relics were recovered. . . .

For me, the summer's work was a great treat, permitting me to take an active part in an archaeology project—something I had always wished for—and realizing that ambition was even more thrilling than the earlier anticipation."

Dean of our medical staff was that grand old philosopher and adventurer, Dr. J. E. Hughes of Shawnee, Oklahoma. He had "retired" years ago and then in the following decade established an enviable reputation as big game hunter in Africa, Asia, Mexico, and Alaska. When war came he had squared his shoulders and again "gotten back into harness." Now, as he joined the desert caravan for an expedition into Monument Valley and Canyon de Chelly, he was again "retiring" in his active robust way to enjoy wandering in the desert and to experience yet another thrilling hunt, this time for petroglyphs and ruins left by prehistoric man perhaps a thousand years ago.

Along with their memories of desert campfires the boys will always remember Dr. Hughes' tales of adventure and his virile philosophy and love of active life in the open. He could have written this story more dramatically than I. He intended to—but first he must make a fishing trip to the Gulf of Lower California. And now I have the sad news that, while fighting a giant marlin, he received his summons to go exploring beyond our human horizons. Should we grieve for our companion of desert trails? I think not, for he would have wished to go that way, on his feet and in the heat of battle. To a Grand Old Adventurer, we Explorers salute you!

And now comes another spring and the West Wind bringing again a call to new adventure.

This summer we will attempt to retrace the trail blazed by the Spanish Explorer Escalante in 1776. We will search for prehistoric ruins, yet unknown. We will camp in high mountain meadows while prospecting for gold. And always we will push out into the unknown.

Would you like to take part in these adventures with us? If so, get out your hiking boots, your duffle—and your little black bag—and join us in June or July at our rendezvous in the southern Rockies.

Editor's Footnote: Any doctor who might wish to volunteer for two weeks or four weeks service with the 1947 expeditions may get detailed information by writing to Ansel F. Hall, General Director, Explorers' Camp, Mancos, Colorado. At the time of publication we are informed that there are also a few places available for boys of high school age who are qualified by interest and enthusiasm for acceptance as Explorers.

Dr. J. E. Hughes (right) and his companion Explorers rest in a cave while searching for prehistoric ruins.

CLINICAL NOTES AND ABSTRACTS

Present Status of Sulfonamide Therapy

Absorption

When sulfonamides are given orally, they are almost completely absorbed from the intestinal tract in 2 to 4 hours, thus it is necessary to give repeated doses on a definite schedule. When given parenterally, the blood concentration is reached more rapidly.

Inactivation

After reaching the blood stream, a portion of the sulfonamides are acetylated, rendered ineffective and possibly toxic. Sulfadiazine is least effected (15%), sulfanilamide (20%), sulfathiazole (30%) and sulfapyridine most inactivated (10 to 90%).

Distribution

The sulfonamides pass into various body tissues in amounts depending upon the blood supply to each. All except sulfathiazole pass into the cerebrospinal fluid, reaching a level of 50 to 65 percent of that in the blood. The sulfonamides pass into the red cells, so *the blood picture must be watched*. The sulfonamides pass through the placenta into the fetus.

Excretion

All sulfonamides are excreted through the urine. Kidney diseases resulting in poor kidney function may reduce excretion. Enough liquids should be given so that the patient excretes more than 1,200 cc. (5 pints) daily.

Dosage

Sulfanilamide 3 to 5 Gm. (45 to 75 gr.) followed by 1 to 3 Gm. (15 to 45 gr.) every 4 hours day and night, will usually cause a blood concentration of 10 mg. per 100 cc. or 10 mg. per cent. Higher doses are given for meningitis and bacteremia.

Sulfapyridine or sulfathiazole: 3 or 4 Gm. (45 to 60 gr.) followed by 1 Gm. (15 gr.) every four hours.

Sulfaguanidine: Poorly absorbed from bowel, so may be given in large doses without resulting in abnormally high blood concentrations, in the treatment of bacillary dysentery and preceding intestinal operations. The initial dose is 0.1 Gm. per kilogram of body weight (1½ gr. per 2.2 pounds of body weight) followed by one half this dose every 4 hours until the number of stools is five or less per day.

Sulfadiazine: 3 or 4 Gm. (45 or 16 gr.) orally followed by 1 Gm. (15 gr.) every four to six hours. Intravenous sulfadiazine need only be given every 12 hours.

Sulfamerazine (methyl sulfadiazine) has similar pharmacologic and clinical properties. With either drug, sodium bicarbonate should be given in 10 to 20 Gm. (150 to 300 gr.) divided doses every 24 hours. See Table 1 for children's size doses.

Sulfasuxidine: (succinlylsulfathiazole) is poorly absorbed by the intestinal tract; it especially affects the Shiga, Flexner or Sonne dysentery bacilli, and Colon bacilli. Typhoid, paratyphoid, streptococcus fecalis and B. proteus are not as susceptible.

Indications

Staphylococcus infections: sulfathiazole is most effective, sulfadiazine or sulfamerazine next.

Hemolytic streptococcus infections: Sul-

fadiazine or sulfanilamide are most effective.

Pneumococcus infections: Sulfadiazine or sulfamerazine.

Meningococcus infections: Sulfadiazine or sulfamerazine are most effective, sulfanilamide next.

Colon bacillus infections: Sulfadiazine or sulfamerazine, except when infection is intestinal, in which case sulfathalidine or sulfasuxidine is used.

Subcutaneous Administration

Subcutaneous administration of 0.5 percent sodium sulfonamide solutions in isotonic sodium chloride solution may be employed. Sodium sulfadiazine should be dissolved in distilled water. Such hypodermoclysis may run into both thighs for periods from 1 to 5 hours.

Toxic Reactions

Table 2 indicates the chief toxic reactions from the sulfonamides.

Crystals of the sulfonamide may appear in the urine and red blood cells may be found, necessitating discontinuance of the drug. Hemolytic anemia and leukopenia may occur. Sulfadiazine results in fewer complications than any other widely effective sulfonamide.

Special Uses

Sulfadiazine, together with adequate amounts of blood plasma, are effective in cholera. Sulfadiazine or sulfanilamide used in small, daily doses definitely prevents many rheumatic fever recurrences. —R. W. Howard, M.D., in *J. Amer. Pharmaceut. Assoc.*, Nov. 1946.

TABLE I

SULFADIAZINE FOR OLDER CHILDREN

Blood Concentration	Initial Dose	Maintenance Dose
10 to 15 mg. per cent	4 Gm. (60 grs.)	1 Gm. (15 grs.), q 4 h
5 to 10 mg. per cent	2 to 3 Gm. (30 to 45 grs.)	1 Gm. (15 grs.), q 6 h.
3 to 5 mg. per cent	1 to 1.5 Gm. (15 to 23 grs.)	0.5 Gm. (7.5 grs.), q 6 h.

SULFADIAZINE FOR INFANTS AND SMALLER CHILDREN

Age	Initial Dose	Maintenance Dose
Under 6 months	0.5 Gm.	0.25 Gm., q 6 h.
6 months to 3 years	1 Gm.	0.5 Gm., q 6 h.
3 years to 10 years	2 Gm.	1 Gm., q 6 h.

TABLE II

INCIDENCE OF IMPORTANT TOXIC REACTIONS DURING THERAPY WITH SOME SULFONAMIDES IN ADULTS*

Toxic Reactions	Sulfanilamide		Sulfapyridine		Sulfathiazole		Sulfadiazine	
	No. Patients	% Reactions	No. Patients	% Reactions	No. Patients	% Reactions	No. Patients	% Reactions
Fever	2910	5%	2421	3.1%	1316	6%	4194	1.6%
Rash	3066	2.2%	3171	2%	1651	5.2%	5137	1.3%
Acute Hemolytic Anemia	1630	2%	2363	1.1%	Very rare		Very rare	
Leukopenia	1000	2%	2026	2.1%	1231	1.6%	4601	1.5%
Agranulocytosis	1000	0.1%	1444	0.8%	Rare		Rare	
Hematuria { Gross / Micro	Extremely rare		2899	4.6%	1749	4.7%	5137	1.7%
Oliguria, Anuria or Azotemia	Extremely rare		2560	2.2%	1124	1.1%	5137	0.4%
Hepatitis	1000	0.6%	Rare		Very rare		Very rare	
Total Important Toxic Reactions		11.9%		15.9%		18.6%		6.5%

* These figures are based upon the reported incidence of toxic reactions and the author's experience and in the instance of sulfadiazine also upon personal communications from Finland, Plummer, Finpen, Bullowa, Spink and Satterthwaite.

Note the low incidence of toxicity with sulfadiazine.

The Diagnosis of Rheumatic Fever

The diagnostic criteria for rheumatic fever have been laid down by Swift, H.E. (*J.A.M.A.*, June, 1929) and by Jones, T.D. (*J.A.M.A.*, October, 1944), who have considered them as major and as minor manifestations of the disease. Jones suggests that a reasonably certain diagnosis can be made in the presence of any combination of major manifestations, or with the combination of at least one major manifestation with two of the minor manifestations. The presence of rheumatic heart disease increases the diagnostic significance of the minor manifestations when no other cause for these manifestations exists.

Major Manifestations

Carditis is probably the most important diagnostic feature and is found in all fatal cases. It is manifested by persistant tachycardia; cardiac enlargement; pericarditis; endocarditis; myocarditis (pericardial friction rub, pericardial effusion, gallop rhythm, organic murmurs and EKG changes).

Polyarthritis (migrating acute arthritis) with red, hot and swollen joints which subside promptly with rest and salicylate therapy.

Chorea is rare in adults with rheumatic fever, but the history of chorea in childhood is frequently obtained.

History of a previous attack is obtained in at least one quarter of patients seen for the first time and is a valuable point in suspected cases.

Subcutaneous nodules (T. D. Jones) are infrequent, but are a definite sign of activity. They are frequently overlooked.

Fever (H. M. Swift) is the most frequent evidence of rheumatic fever. The degree of fever is not so important as is the persistance. In the subacute form it may manifest itself as an evening rise to 99.6 or 100 degrees, or it may assume a cyclic curve with normal temperatures for one to two weeks followed by a low grade fever for a few days. Griffith, G. C. (*Calif. & West. Med.*, Sept., 1945) states that fever is the most reliable evidence of activity in the absence of demonstrable carditis.

Minor Manifestations

Pneumonitis is a common occurrence in the acutely ill and a not infrequent finding in the milder cases of rheumatic fever. It is common as a presenting sign in initial attacks and upon reactivation of a rheumatic state. The radiological picture is that of an atypical pneumonia.

Abdominal Pain has been long considered of great import at the onset of an acute attack of rheumatic fever, but it is not common late in the disease. It frequently simulates appendicitis and must be evaluated in conjunction with other manifestations.

Rashes, purpuras and epistaxis. There is a definite increase in the fragility and permeability of the capillaries in rheumatic patients, but purpuras and epistaxis are not commonly described in the more recent literature. Jones states that Erythema Marginatum is the most significant cutaneous finding in his experience.

Tachycardia is important when it is constant and persists during sleep. Paroxysmal tachycardia and auricular fibrillation are rare.

Other minor manifestations include weight loss, precordial pain, headache, pallor, fatiguability, vomiting, sweating, hematuria, pleuritis and bursitis.

Laboratory Manifestations

Laboratory findings are not specific in rheumatic fever and there is no specific laboratory diagnostic test. There is frequently a microcytic anemia. During the acute phase the leukocyte count is elevated and there is an increase in the percentage of polymorphonuclear leukocytes. The sedimentation rate is elevated during the phase of activity and remains the best single guide to the degree of activity.

Electrocardiographic changes include 1) prolonged atrioventricular conduction time, 2) alterations in the QRS complex and in the T Wave suggestive of, or even typical of, those seen in pericarditis and in coronary insufficiency.

The Anti-Streptolysin titer is elevated from the onset until well after the disappearance of other signs of activity. Technical difficulties make its use limited to epidemiologic studies. All in all the laboratory aids are of more value in evaluating activity than they are in establishing a diagnosis.

Differential Diagnosis

There are three clinical conditions which must be ruled out even in the presence of an acutely ill patient presenting combinations of the major manifestations as listed above. These are still's disease, lupus erythematosis and rheumatoid arthritis. Other diseases from which the rheumatic state must be differentiated include: undulant fever, tuberculosis, meningococcus septicemia, the acute infectious arthritides (gonorrheal) and so on, chronic osteoarthritis, gout, nephritis and poliomyelitis.—C. D. MARPLE, M.D.

Tularemia

The total number of treated cases to date is 303, which dates from the first work in 1940.

This is the largest series successfully treated with one drug. All other treatment is futile except streptomycin and bismuth. Streptomycin is better than bismuth in the pulmonary or the anginal forms of tularemia; but these two forms comprise less than 5 per cent of the total of cases. In the lymphatic or the typhoid types (95 per cent of cases) bismuth is easy, cheap, effective, and shorter in convalescence, basing this last conclusion on Foshay's reports on his use of streptomycin.

How did we get this many? We started looking for them when we realized that we had something to offer in treatment, remembering that this was long before streptomycin was offered at all. (1940).

Here, in county and city health work, all serums of ill persons are checked for typhus, tularemia and undulant fever as a matter of routine; so because the nurses on this type of job *look*, they pick up a lot of them. They are as frequent elsewhere—but are not looked for and so only late in the disease, if at all, are discovered. We think that only about 04 per cent, at most, are diagnosed at all.

The greatest error is the constant harping on rabbits as the major source of infection. The tick is the vector in at least 85 per cent of the cases. All three forms of ticks are vectors and in the south, they are out all winter. In the north the tick is in the ground during the severe freezing weather. In the north, the infected meat of rabbits is a menace while through the south the rabbit is not so commonly eaten.

Around Pittsburg, they have quite an incidence of it during the winter months because frozen rabbits are shipped from Missouri by the carload for food. Then, when not thoroughly cooked the human being gets a highly deadly form of the disease, because of the mass infection, and no time for defense mechanism.

I believe it is correct that Vermont is the only state in the Union from which there is no report of tularemia. This should add up as bad diagnosis. I was gravely informed in Youngstown, Ohio, that there were no ticks in that section, yet in ten minutes I found two of the three prevalent types.

Possibly 100 or 150 additional cases have been treated by doctors in other states since 1940 as it got noised about that we had an easy answer here for the disease and they phoned in for information.

Parke, Davis & Company have a bismuth that will cure tularemia, (the first work here was with their "Thio-Bismol"). We are now (past 275 cases) using Tetra-Tartrate (Searle) which seems to be about three times as effective, as to available bismuth.

What we are interested in is getting bismuth used in the treatment of typhus. The few cases treated here have responded even more rapidly than has tularemia, but our opinion is worth nothing because we do not see enough of it.

Anywhere that there are ticks tularemia will be found. The next thing is a doctor who asks for typhoid, typhus, tularemia, and undulant fever tests. *All of them*, not just one, on all the cases of undetermined fevers and particularly ones with any adenitis, of any degree.

The serologist must be thoroughly familiar with cross titres and know how to read cross-flocculations. It is disconcerting to see the reports from laboratories of presumed standing where a 1/20 positive dilution has been returned as diagnostic, and of course it is nothing of the sort.

I know all the reams written on serum and protein preciptation and that every one knows that bismuth is terrible in the blood-stream. Probably quite true for the

rabbit—I wouldn't know. I do know that it is not true for the nearly half a million doses to date injected in the human venous system with no reaction remotely approaching danger. Among those pathologies were 400 cases of pulmonary tuberculosis.— W. W. JACKSON, M.D., Hot Springs, Arkansas.

Heart Disease in Pregnancy

Heart disease in pregnancy is predominately that of rheumatic valvular disease. Cardiovascular syphilis, and severe exophthalmic goiter are rare in pregnancy. Congenital heart defects are also rare. Congestive heart failure usually occurs in the 7th and 8th months; rarely earlier or later. In normal pregnancy, there is a marked increase in the circulating blood volume, a rise of almost 50% with corresponding blood dilution. There is increased oxygen consumption and increased cardiac output, to which must be added the usual real increase in body weight.

Diagnostic Pointer: If heart failure appears for the first time before the 6th month, after the 8th month, or after delivery, it is not simple heart failure, but maybe an anemia, a toxemia, or an infection.

Interference with pregnancy! Do not interrupt cardiac patients because of their heart condition after the load of pregnancy has become heavy. It is more satisfactory to treat the cardiac disease and to wait term.

Treatment

Proper care for the average favorable cardiac patient requires work for the physician and access to a hospital, for the patient at any time during pregnancy.

Control of weight and nutrition: A daily routine should be advised so that patients expend the same amount of energy every day—warning them against the usual temptations to break their routine; such as holidays, visitors, sickness in the family, moving, house-cleaning, shopping trips. If, in spite of precautions, they show signs of congestive failure, they must be put to bed under hospital conditions and observed closely. If they do not show congestive heart failure, but show signs of embarrassment in circulation and respiration, that are normal in pregnancy, reduce their expenditure of effort. Tell them to stay at home. Thus one can usually anticipate congestive heart failure.

Early recognition of congestive heart failure: Normal pregnancy causes many signs and symptoms that suggest congestive heart failure. There may be more rapid breathing and increased respiration, but even at rest, the normal patient may breathe hurriedly and deeply. There may be small waves of dyspnea. There may be orthopnea. The pulse rate is quickened. The heart size may be enlarged. There is fluid retention and there may be edema.

If a patient has no rales and no breathlessness, one can dismiss the possibility of heart failure until the next visit. If either is present, study the patient and try to make up one's mind and, if one decides there is congestive failure, put the patient to bed and treat her thoroughly. If congestive failure is not present, reduce the days' activities and watch the patient.

Weight gain nearly always precedes congestive heart failure. Sudden or steady excess weight gain is an important warning. If a patient has not gained weight between visits and has no rales, she is not developing congestive heart failure.

Weighing the patient every day is a useful gauge for estimating the results of treatment of congestive heart failure in general as well as in pregnancy, and when a cardiac patient has once failed, I direct the patient to record the weight every morning and report a gain of more than three pounds, even if there are no subjective symptoms.

The pregnant woman with heart disease is sensitive to fluid administration. There are special temptations to give her large amounts of fluid, such as pyelitis, during the administration of sulfa drugs. The salt intake should be restricted during pregnancy.

Hypertension in pregnancy: The young woman with mitral stenosis need not worry too much concerning aggravation of her heart disease by pregnancy. The woman with hypertension, however, may be permanently injured by pregnancy.— BURTON E. HAMILTON, M.D.

DIAGNOSTIC POINTERS

Boeck's Sarcoid (Sarcoidosis)

The chest x-ray findings are out of all proportions in the patients symptoms as the chest lesions are most frequent. Less than 1/5 of the patients in this country show bone lesions. The diagnosis may be made by removing a large lymph node for pathologic study. *Symptoms:* fever, leukopenia, hypoproteinemia, and an increase in serum phosotate. In colored patients, tuberbulosis often is suspected. Chaulmoogra oil may be of definite benefit, thus making one suspicious that leprabacillus may cause the disease.

Diseminated Lupus Erythematosis

The diagnosis of this disease should include those conditions causing prolonged fever, leukopenia and anemia, red blood cells in the urine, vascular lesions in the retina, a changing blood loss and reaction from plus to plus minus, and occurring especially in women. The butterfly rash is not sufficient for the diagnosis, as the disease frequently occurs without the rash and a rash appears only in the late stages. There is no specific treatment.

Fever of Unknown Origin

Patients who have fever accompanied by painful joints, muscular pains and stiffness, precordial pain and dyspnea, acute abdominal symptoms or acute pyelonephritis, or who have fever or unknown origin, whether children or adults, should be suspected of having rheumatic fever. In most instances, the sedimentation time will be prolonged. An upper respiratory infection usually precedes by 1 to 4 weeks. —D. H. ROSENBERG, M.D., in *New Eng. J. Med.*, Jan. 31, 1946.

Eyelid Edema and Muscular Pains

The onset of generalized pains and edema of the eyelids should make one suspect the onset of trichinosis. The most common vehicle today is the uncooked sausage. Trichinosis today is a mild disease with very few or no deaths. Gastroenteritis may precede or accompany the lid edema.—H. B. SHOOKHOFF, MD. in *Am. J. Pub. Health*, Dec. 1946.

Foreign Bodies in the Foot

Any prolonged sinus in the foot following an abscess, with or without a history of injury should be X-rayed before exploring. The typical radiological appearance in addition to presence of sinuses is diagnostic of the presence of a foreign body. The condition is apparently cured by removal of the foreign body. — A. B. TAYLOR, M.D., in *Clin. Proc. Cape Town Post Grad. Med Assoc.*, May 1946.

Cardiospasm and Carcinoma

An important step in the differentiation of cardiospasm from carcinoma of the lower end of the esophagus is the examination radiologically using a barium meal. Examination of the area imediately after the patient has inhaled amyl nitrite is valuable. In cardiospasm, the cardia relaxes and barium passes into the stomach; in carcinoma, there is no relaxation.—O. N.

Joint Pains and Stiffness

Pain and stiffness in a single joint without fever or tachycardia may be the initial symptom of rheumatic fever in the adult or child. There may be no objective findings or slight tenderness, mild tenderness and minimal swelling may be found.—D. H. ROSENBERG, M.D., in *New Eng. J. Med.*, Jan. 31, 1946.

THUMBNAIL THERAPEUTICS

Benzyl Benzoate for Chiggers and Scabies

The impregnation of benzyl benzoate in the clothing will prevent infestation with chiggers. After several washings with strong laundry soap, benzyl benzoate impregnation will retain its repellent action for mites and will also kill schistosome. Benzyl benzoate is effective in the treatment of scabies.—E. C. Faust, Ph.D., in *J.A.M.A.*, Dec. 21, 1946.

Splenectomy for Hemolytic Anemia

Hemolytic anemia, either the chronic congenital hemolytic anemia or the acquired are benefited by splenectomy. In idiopathic thrombocytopenic purpura, splenectomy is of value. In Banti's syndrome, splenectomy may be of value.—Cyrus C. Sturgis, M.D. in *J.A.M.A.*, Dec. 21, 1946.

Penicillin for Tropical Diseases

Penicillin is specific for the common tropical spirochetal diseases, yaws (frambesia), pinta, relapsing fever, and leptospirosis. It is a valuable adjuvant in combating certain complications in the typhus group of diseases while the patient is taking para-aminobenzoic acid. Penicillin reduces certain intestinal bacteria and indirectly simplifies the treatment of amebic colitis.—E. C. Faust, Ph.D., in *J.A.M.A.*, Dec. 21, 1946.

Metastatic Cancer of the Breast

The use of large doses of estrogens results in a 40 per cent improvement in patients who have metastatic lesions from a breast cancer in the soft tissue.—Frank L. Adair, in *J.A.M.A.*, Dec. 21, 1946.

Sub-Acute Bacterial Endocarditis

Penicillin is given in doses of one million to one and one-half million units per day. Treatment must continue for at least one month.

Combinations of Sulfonamides

Several sulfonamide drugs may be dissolved in the same medium and show little clinical tendency toward crystallization in the kidney and ureter. Patients treated with equal amounts of sulfadiazine and sulfathiazole in the same dosage formerly employed (as, for example, 4 grams as the initial dose and 1 gram given every 4 hours obtained prompt results and sulfonamide crystals rarely were found in the urine; no alkali therapy was given).

Silver Nitrate

Silver nitrate in compresses of 0.1 per cent strength or painted on in 1 per cent aqueous solution is an extremely useful drug in superficial infections and is almost reactionless, unless excessive strengths are used. It is important to apply the solution as directly as possible to the site of infection, not merely on top of crusts and epithelial debris.

Mosquito Repellent

If dimethyl phthalate is rubbed on the exposed skin, it will produce no dermatitis and will repel mosquitoes for several hours.— E. C. Faust, Ph.D., in *J.A.M.A.*, Dec. 21, 1946.

Lymphocytic Choriomeningitis

Lymphocytic choriomeningitis may resemble mild pneumonia, clinically. The virus can be found in the spinal fluid and blood. This disease occurs in wild mice.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

Conduction Anesthesia

Edited by J. L. Southworth, M.D. and Robert A. Hingson, M.D. J. B. Lippincott Company, 1946. $18.00.

The authors define conduction anesthesia as the interruption of nerve conduction, principally sensory conduction, without interfering with consciousness. This includes local infiltration, nerve blocking and combinations, spinal anesthesia by single injection and continuous techniques, peridural block, and refrigeration anesthesia. Therapeutic nerve block connects medicine, surgery and anesthesia, in the attempt to relieve the patient of pain.

The work is based on the studies of George P. Pitkin, and the hundreds of life-like and very teachable illustrations were conceived under his direction.

The book calls attention to the many errors concerning local anesthesia which are listed in present-day textbooks of surgery, such as the misunderstanding of field block anesthesia by the technic in which one injects all structures around a given structure. When one knows the nerve supply to a certain field, it is simpler for the surgeon and less uncomfortable for the patient, to block off these nerves by a few, well placed injections, rather than by surrounding the entire field with the local anesthetic solution.

The general surgeon and practitioner who wishes to use local anesthesia for office surgery, for deliveries, or for major surgery, will find many points of value. Any physician who wishes to relieve severe pain by the shortest and most logical method will find many suggestions and illustrations of value in this volume. It is certainly the most basically accurate, the best illustrated, and the most complete volume on local anesthesia yet published.

The Eye Manifestations of Internal Diseases

By I. S. Tassman, M.D., Associate Professor of Ophthalmology, University of Pennsylvania, Philadelphia, Pa. C. V. Mosby Company, 1946. $10.00.

This book attempts to correlate ophthalmology and general medicine. This is an excellent idea but to carry it out properly requires the collaboration of some one trained in general medicine and the ophthalmologist. In this text all the references to systemic conditions are taken from the literature so that one has the feeling that very little of this material is from firsthand knowledge. It is well referenced and the text is exceedingly well illustrated, however the first portion of the book dealing with organic ocular changes has relatively little to do with internal diseases.

Ulcer of the Stomach, Duodenum and Jejunum

By Ralph C. Brown, M.D., Professor of Medicine, University of Illinois College of Medicine, Chicago. Oxford University Press, 1946. $2.25.

The author has many years of experience in the diagnosis and treatment of peptic ulcer. He gives freely of this knowledge in its management. Medical therapy is discussed in detail; surgical therapy is suggested only for a few, definite indications. He cautions concerning the long period of time needed to really heal an ulcer.

Personal Hygiene Applied

By Jesse Feiring Williams, M.D. Sc.D., Emeritus Professor of Physical Education, Columbia University, New York City. W. B. Saunders Co., 1946. $2.50.

This eighth edition presents useful, interesting information on physical and mental health; how to obtain and keep it. It is a well rounded presentation from a mature standpoint, considering health as a total of a calm, happy mind and a physically efficient body. Complicated terms are avoided.

Histology and Embryology

By Jose F. Nonidez, Sc.D., Professor of Anatomy, Cornell University, N. Y. Oxford University Press, 1946. $2.00.

An outline form of the knowledge concerning the structure and development of the organs of the human body. Blank spaces are provided so that the student may insert sketches of a subject often rendered difficult to grasp because of multiplicity of details.

Allergy

By Erich Urbach, M.D., Chief of Allergy Department, Jewish Hospital, Philadelphia, and P. M. Gottlieb, M.D. Associate in Allergy Department. Grune & Stratton, 1946. $12.00.

A massive volume containing in full detail the technics in all fields of allergy. The relevant literature is considered in thousands of references. An ideal book for the allergist but not recommended for the general physician.

Medical Uses of Soap

A Symposium. Lippincott, 1946. $3.00

This is a second printing, with a new chapter on "Surgical Uses of Soap." Soap technology is presented, together with discussions on soap on normal and abnormal skins and hair, its uses in industry, shaving, medicine and surgery. The employment of soap in cleansing wounds and burns is well established, and its use in preparing for clean surgical procedures should become more common.